

# NUP4107UPMU

## Product Preview

# Low Capacitance ESD Protection Array for High Speed Data Line Protection

The NUP4107UPMU ESD protection array is designed to protect high speed data lines from ESD. Ultra-low capacitance and high level of ESD protection makes this device well suited for use in USB 2.0 applications.

### Features

- Low Capacitance (< 2 pF Typical Between I/O Lines and Ground)
- ESD Rating of Class 3B (Exceeding 8 kV) per Human Body model and Class C (Exceeding 400 V) per Machine Model
- Protection for the Following IEC Standards:  
IEC 61000-4-2 (12 kV Contact)
- UL Flammability Rating of 94 V-0
- This is a Pb-Free Device

### Typical Applications

- USB 2.0 Data Line and Power Line Protection
- MIDD Ports
- SIM Ports
- Gigabit Ethernet
- Notebook Computers

### MAXIMUM RATINGS (T<sub>J</sub> = 25°C unless otherwise noted)

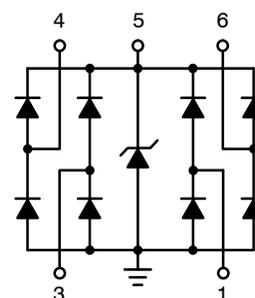
Rating	Symbol	Value	Unit
Operating Junction Temperature Range	T <sub>J</sub>	-40 to +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C
Lead Solder Temperature – Maximum (10 Seconds)	T <sub>L</sub>	260	°C
Human Body Model (HBM) Machine Model (MM) IEC 61000-4-2 Contact (ESD)	ESD	16000 400 12000	V

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



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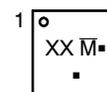
<http://onsemi.com>



### MARKING DIAGRAM



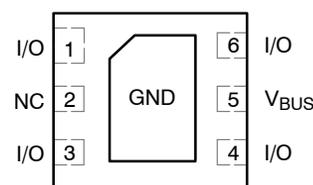
UDFN6 1.6x1.6  
MU SUFFIX  
CASE 517AP



XX = Specific Device Code  
M = Date Code  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

### PIN CONNECTIONS



### ORDERING INFORMATION

Device	Package	Shipping†
NUP4107UPMUTAG	UDFN6 (Pb-Free)	3000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.

# NUP4107UPMU

## ELECTRICAL CHARACTERISTICS ( $T_J=25^\circ\text{C}$ unless otherwise specified)

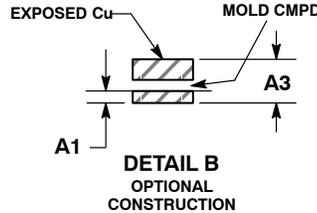
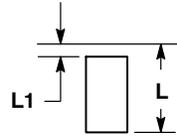
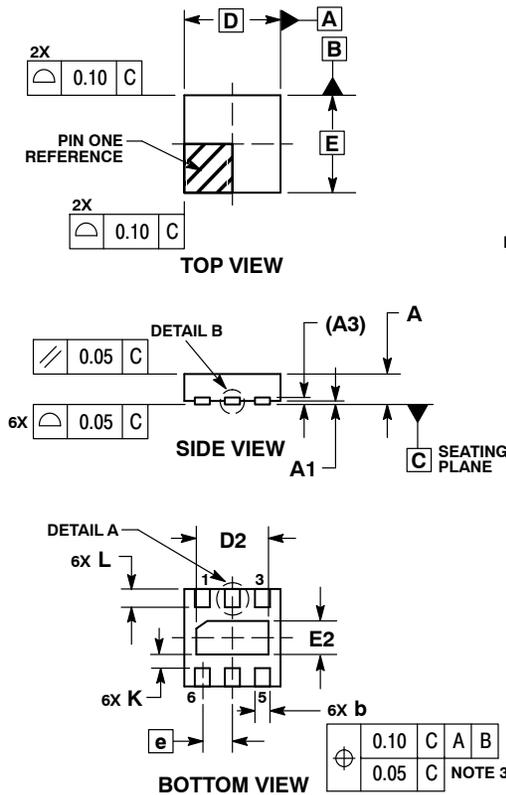
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$	(Note 1)			5.0	V
Breakdown Voltage	$V_{BR}$	$I_T = 1 \text{ mA}$ , (Note 2)	6.0			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5 \text{ V}$			1.0	$\mu\text{A}$
Junction Capacitance	$C_J$	$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$ between I/O Pins and GND		1.9	3.0	pF
Junction Capacitance	$C_J$	$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$ between I/O Pins		0.8	1.0	pF

1. TVS devices are normally selected according to the working peak reverse voltage ( $V_{RWM}$ ), which should be equal or greater than the DC or continuous peak operating voltage level.
2.  $V_{BR}$  is measured at pulse test current  $I_T$ .

# NUP4107UPMU

## PACKAGE DIMENSIONS

UDFN6, 1.6x1.6, 0.5P  
CASE 517AP-01  
ISSUE O

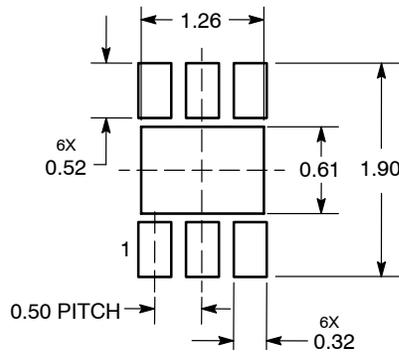


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION b APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM TERMINAL.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

MILLIMETERS		
DIM	MIN	MAX
A	0.45	0.55
A1	0.00	0.05
A3	0.13	REF
b	0.20	0.30
D	1.60	BSC
E	1.60	BSC
e	0.50	BSC
D2	1.10	1.30
E2	0.45	0.65
K	0.20	---
L	0.20	0.40
L1	0.00	0.15

### SOLDERMASK DEFINED MOUNTING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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